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BY CAROL TENOPIR

Five Years into the Past . . . Five Years into the Future

(Based on a presentation for the Online Northwest '88 conference in Corvallis, Oregon.)

THIS COLUMN marks a personal milestone. It is my 50th Online Databases column for *LJ*. A lot has happened in the online world since February 1983 when my first column appeared. I chose this time to reflect on the things that have changed over the last five years (and some things that haven't). I have selected five issues or trends that I feel will have the most impact on database searching for the next five years.

First, a look back. In 1983 a majority of searchers were still using dumb terminals, although most had plans to switch to micros. A majority were still searching at 300 baud, but the impact of 1200 baud was being felt; 2400 baud was not yet available for access to any of the major online vendors.

Dialog's Knowledge Index and BRS's After Dark end user services had just started and we were waiting to see if anyone would use them and how they might impact library services. Although "end user" was a buzzword, the majority of online accounts were still held by libraries. CD-ROM databases did not exist.

Issue #1: Quality control

Almost every year for the last five years I have predicted that quality of databases will be a hot topic sometime in the next few years. Why do I still think so? This kind of issue takes a back seat to the excitement of new technologies. When online was new all we really wanted to talk about were the many positive exciting possibilities.

The same happened when CD-ROM databases were first introduced. That is natural and appropriate, but as a technology matures, and perhaps as we mature as searchers, there is more time to focus on what we're getting and what we're giving, that is, on the quality of the product we are accessing and passing on to clients.

We need to be more actively concerned with such things as: what criteria are used to select and gather information; the quality of indexing vocabularies and how they are applied; time lags with indexing; and the quality of the input process. All affect the success of retrieval as well as the product we deliver and all affect our capability and reputation as information providers. Any technology is a means to an end; the end must be the provision of accurate and appropriate information.

Issue #2: More in-house databases

CDs as in-house databases will unquestionably increase in numbers and in amount of use in libraries. There are a few limitations with CDs, however. Until this year, CD databases supported only a single user and are still very limited. The disc must be mastered so it is not easy to update or to add custom enhancements to purchased databases. Other formats for in-house databases will have a big impact on libraries in the years to come.

Last October BRS announced their BRS Onsite—the leasing of major databases to be housed locally at a library. That idea is certainly not new. Before online access was possible and long before BRS existed, a library could lease magnetic tapes of several major indexes for loading onto their local computer. The main difference is that BRS provides the software and support for these local databases and the system can be linked into a local area network (LAN) or into the library's online public access catalog (OPAC).

What is already happening in large academic and special libraries is

the merging of access to external databases with access to the internal library collection. This blurring of lines between OPACs (traditionally developed out of tech services) and external database access (traditionally grown out of public or reference services) will continue at an accelerated pace and will have major effects in the library. This merger will impact traditional staffing within the library, cataloging practices and assumptions, and OPAC design, as well as users' perceptions of the library and its collections.

The logical extension of access to the library catalog and to more bibliographic databases through the central library system is the capability of accessing complete texts of selected materials. Many full-text databases are of course available online now, but as yet they have not been made a significant part of in-house systems. Limits on computer storage capacity is one reason; unwillingness on the part of publishers or vendors to lease tapes of full texts is another. But these problems are being solved, so look for more incorporation of full texts into local database systems.

Full texts are good if the information is already in machine-readable form and if they don't contain many graphics. For other materials (those that are used less often, are older, or contain lots of graphics) telefacsimile links with in-house databases may be the best alternative. Telefacsimile is making a comeback in libraries because the machinery is so much better and so much less costly than it was a few years ago.

Issue #3: Changes in database visuals

All of this leads directly into the third issue—changes in the way databases look. This year Dialog has introduced pictures into the Trademarkscan database, and it certainly won't be the only one to do so.

Full-text databases of today are not really complete texts nor are they



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substitutes for print because they exclude photos, graphs, drawings, etc. The trademark images are the first step in the increased availability of graphics in online databases.

The addition of graphics to full-text databases will require better hardware and better software on the part of the searcher. We will need to budget for better monitors, higher disk storage capacities, better printers, and faster modems.

Graphics won't be the only change in the way databases look in the next five years. New designs are being developed now that will change some of the products we are accessing. Everyone has heard of hypertext by now, the linking of documents or different portions of texts to allow related ideas or documents to be retrieved. Hypertext databases are under development now and will allow us to get away from the linear view of text.

Issue #4: Pricing policies

Like so many of these issues, CD-ROM databases have been a catalyst for the fourth trend. Lots of us like the idea of unlimited access to a database for a single yearly fee. It enables libraries to offer more end user searching, prepare budgets in advance, and use database searching for teaching purposes.

Librarians are beginning to ask: Why not the option of flat-fee pricing for online databases? And except for heavy users of one database, a high flat fee for one database isn't economical, so why not flat-fee access to a group of databases or an entire online service?

At the Online '87 meeting this past October in Anaheim, California, Telebase Systems (the EasyNet people) previewed something called the Answer Machine, discussed in my column "Is Connect-Time Pricing Obsolete?" (*LJ*, March 1, p. 48-49). The idea of the Answer Machine will be to provide unlimited access to any of the hundreds of databases and many online vendors that can be accessed through the EasyNet gateway. A library will pay a flat yearly fee, set the Answer Machine out in the public area and turn people loose on it. It allows the librarian to select an alternative payment scheme for online access. This is a trend that I think is very positive.

The changes in pricing policies will not be all positive in the next five

years. Vendors and database producers are beginning to look for ways to recover revenues lost from our searching at higher transmission speeds, using software that allows us to upload portions of the search strategy, and our downloading of more records. Libraries that do not search at faster speeds or that do not do lots of uploading or downloading in many cases will be penalized financially.

Issue #5: Market changes

Finally, the fifth trend that will be important for the next five years is changes in the database marketplace. The change that is close to our hearts is the end of the domination of the library market in the database industry. This has been coming for a long time, but has taken much longer than originally predicted. In some ways you may be saying "it was nice while it lasted," but there will also be some positive effects.

The first is that the library market has been pretty well saturated for the last few years. As the total user base for online services grows with more end users, we do have the possibility of lower prices or at least more low price options such as Knowledge Index and BRS/After Dark.

Another positive impact that is just beginning to be realized is the development of more and perhaps better or more varied and innovative products. Also perhaps we will finally see better search software, although I think the development will be at the microcomputer front end level rather than at the online vendor level.

One impact is the increased access to bibliographic citations of other nations' literature. Many major U.S. databases have claimed to cover "the world's literature" on a topic while excluding large parts of the world, notably some Eastern European countries, Asia, and the Pacific. One effect on libraries will be the increased need for translations and the challenges of getting source documents. As serial budgets are being cut, it is unlikely that more foreign journals will be added to U.S. libraries. Better cooperative arrangements and ILL services will be needed.

Things that won't happen

What would I like to see in five years that I don't think I will?

1. Vastly improved command languages or a common command lan-

guage. The major vendors will continue to make enhancements and changes but these are mostly technical or minor and cosmetic. They do not profoundly improve the way we can search and retrieve information. As I mentioned earlier, the real developments in software will come at the microcomputer and CD level, although true "computer intermediary" expert systems will take longer than five years.

2. Prices coming down dramatically for the major databases or major vendors. There will be different pricing options, but on the whole, for the average user on standard systems, the prices will not go down and will likely go up.

3. A significant increase in quality of the large databases. (I said we needed to be concerned about it for the next five years, I didn't say anyone would listen to us yet.)

On a more positive note, there are some things I'm glad we are not likely to see in the next five years.

1. The abandonment of controlled vocabulary indexing as more full text becomes available. The unique contribution and role of each will be recognized. Some full-text vendors have been predicting for at least five years that full text online renders indexing obsolete. Recent research shows that is not so. Controlled vocabulary indexing can offer cost-effective, high-precision searching. The development of experimental expert systems has placed a renewed focus on controlled vocabularies as knowledge bases.

2. An end to the intermediary searcher. Many end users, even if they can do it themselves, don't always want to and after they've done a few searches may realize that sometimes a professional can do it better. End users and intermediaries will continue to coexist.

The information professional is in an excellent position to influence and direct many of the coming changes in databases and database services. We are the ones with the longest tradition and most experience with the current products. We contribute a broad vision, encompassing a spectrum of many databases, many technologies, and many users. We need to be actively involved in designing products for the future because the changes will affect all of us. If we don't, there are others who are less qualified or who have different interests who will direct the future of the database industry.